FIG. 1

FIG. 2

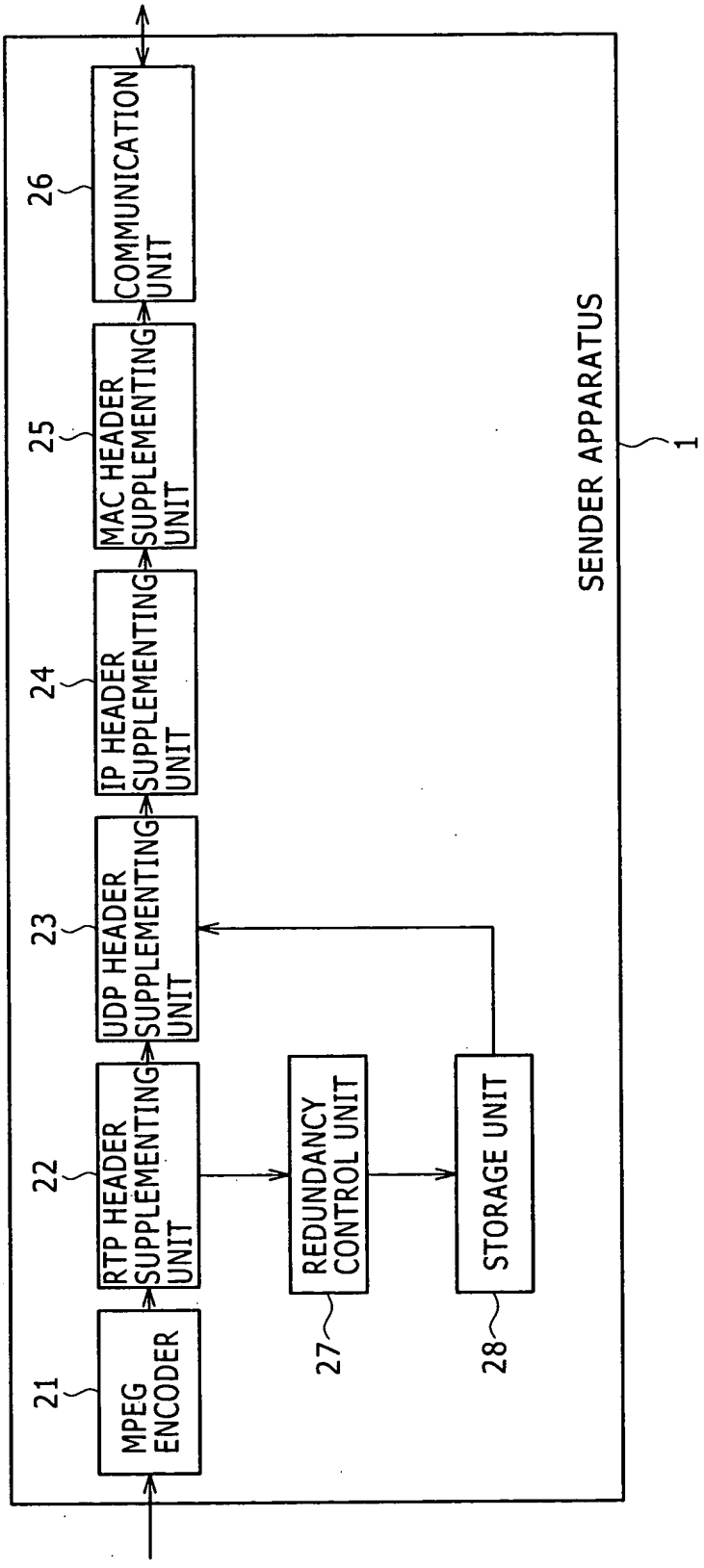

SENDER APPARATUS
1
MPEG ENCODER
21
RTP HEADER SUPPLEMENTING UNIT
22
UDP HEADER SUPPLEMENTING UNIT
23
IP HEADER SUPPLEMENTING UNIT
24
MAC HEADER SUPPLEMENTING UNIT
25
COMMUNICATION UNIT
26
REDUNDANCY CONTROL UNIT
27
STORAGE UNIT
28

FIG. 3

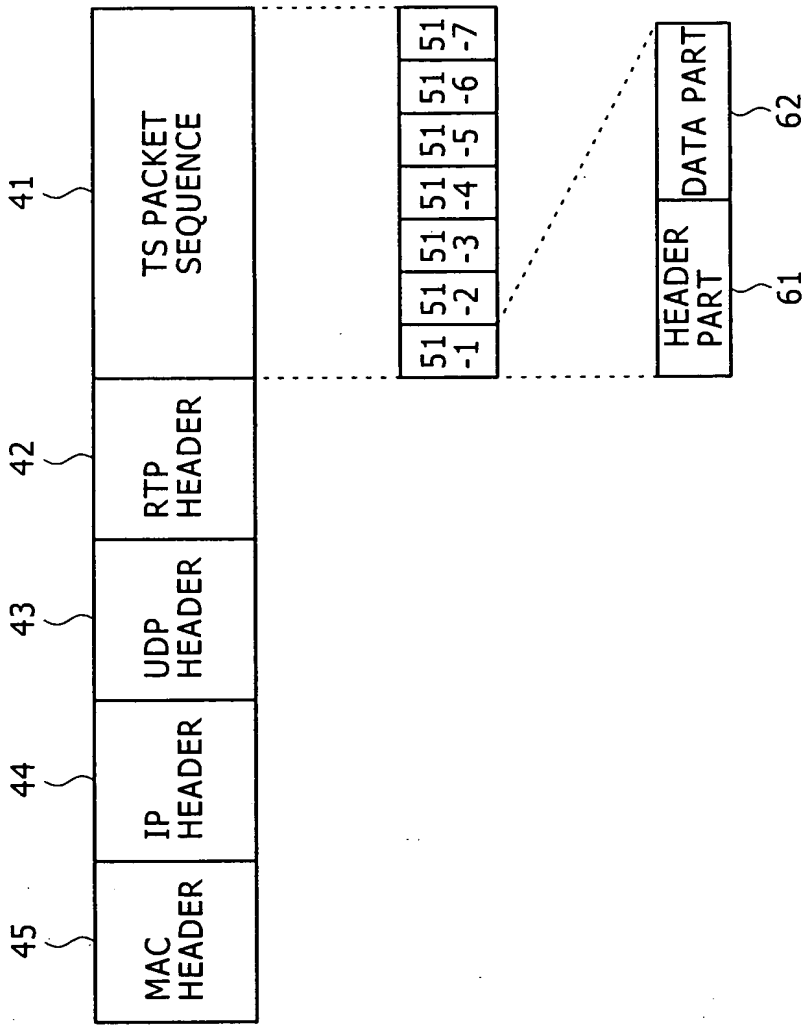

MAC HEADER
IP HEADER
UDP HEADER
RTP HEADER
TS PACKET SEQUENCE
45
44
43
42
41
51 -1
51 -2
51 -3
51 -4
51 -5
51 -6
51 -7
HEADER PART
DATA PART
61
62

FIG. 4

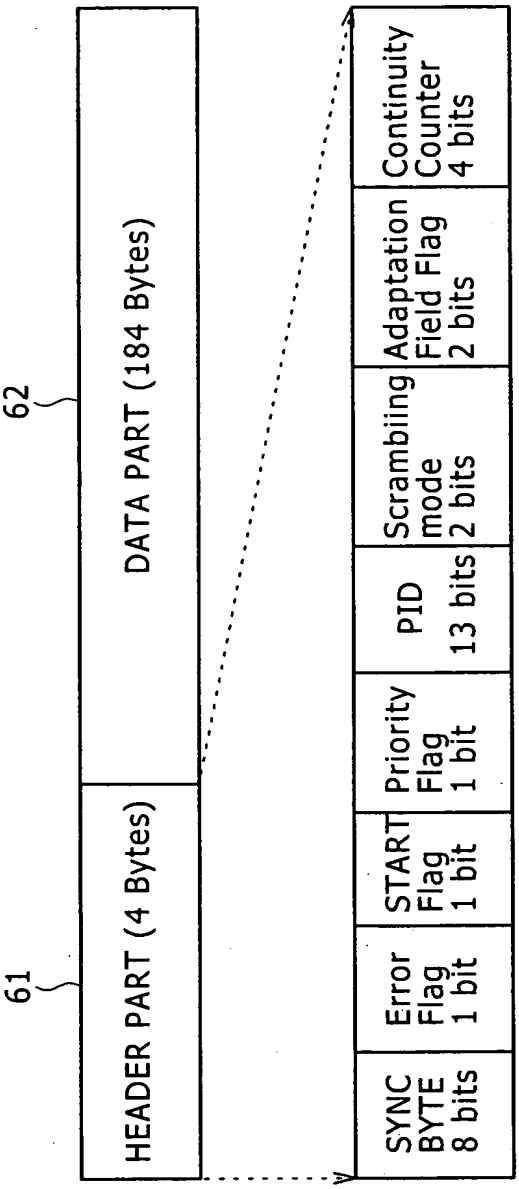

61
HEADER PART (4 Bytes)
62
DATA PART (184 Bytes)
SYNC BYTE 8 bits
Error Flag 1 bit
START Flag 1 bit
Priority Flag 1 bit
PID 13 bits
Scrambiing mode 2 bits
Adaptation Field Flag 2 bits
Continuity Counter 4 bits

FIG. 5

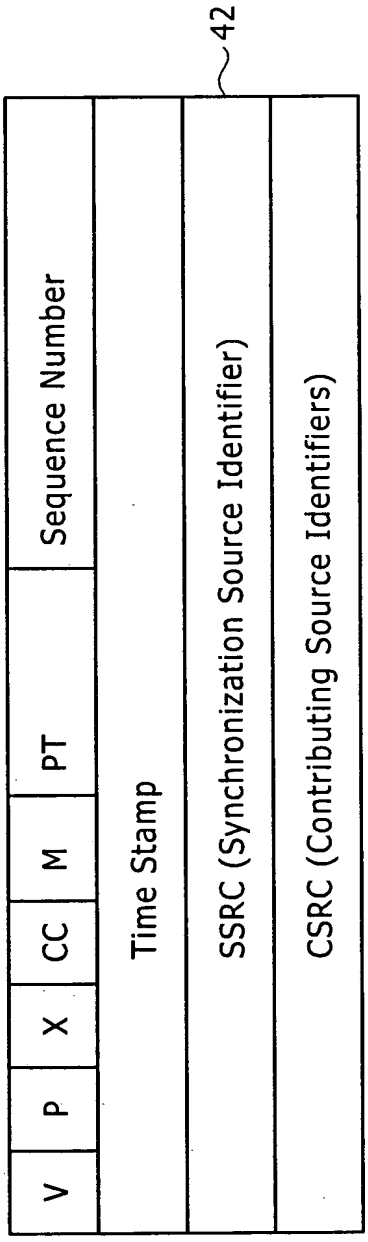

42
V
P
X
CC
M
PT
Sequence Number
Time Stamp
SSRC (Synchronization Source Identifier)
CSRC (Contributing Source Identifiers)

FIG. 6

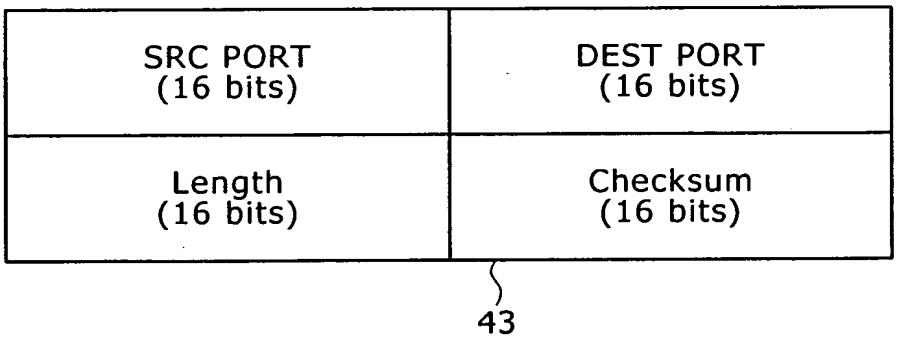

SRC PORT
(16 bits)
DEST PORT
(16 bits)
Length
(16 bits)
Checksum
(16 bits)
43

FIG. 7

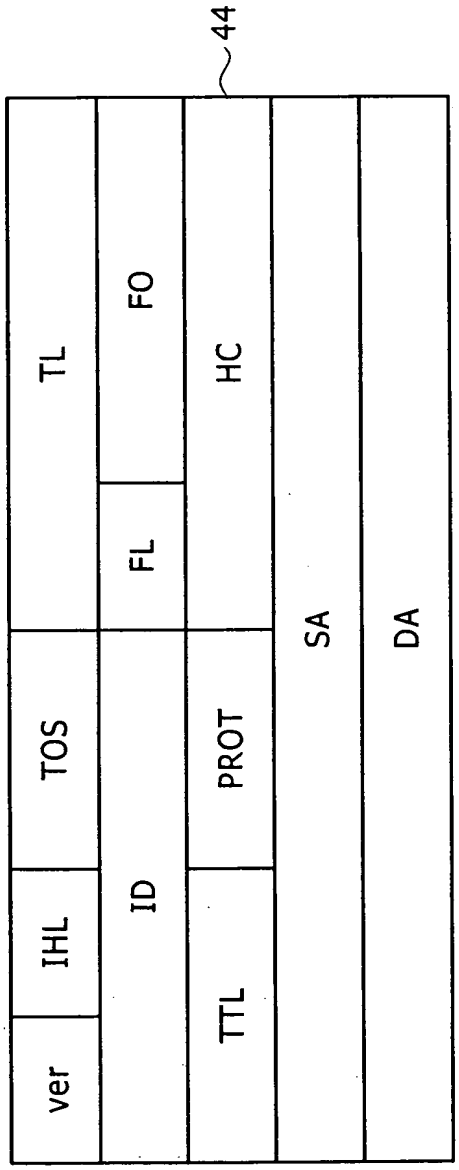


FIG. 8

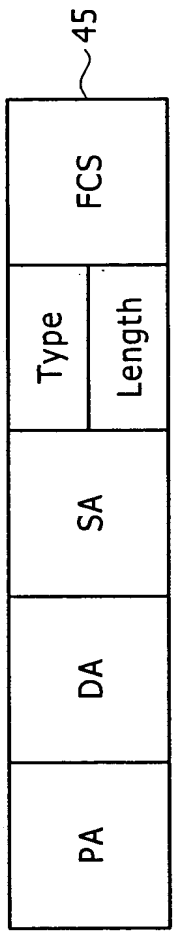


FIG. 9

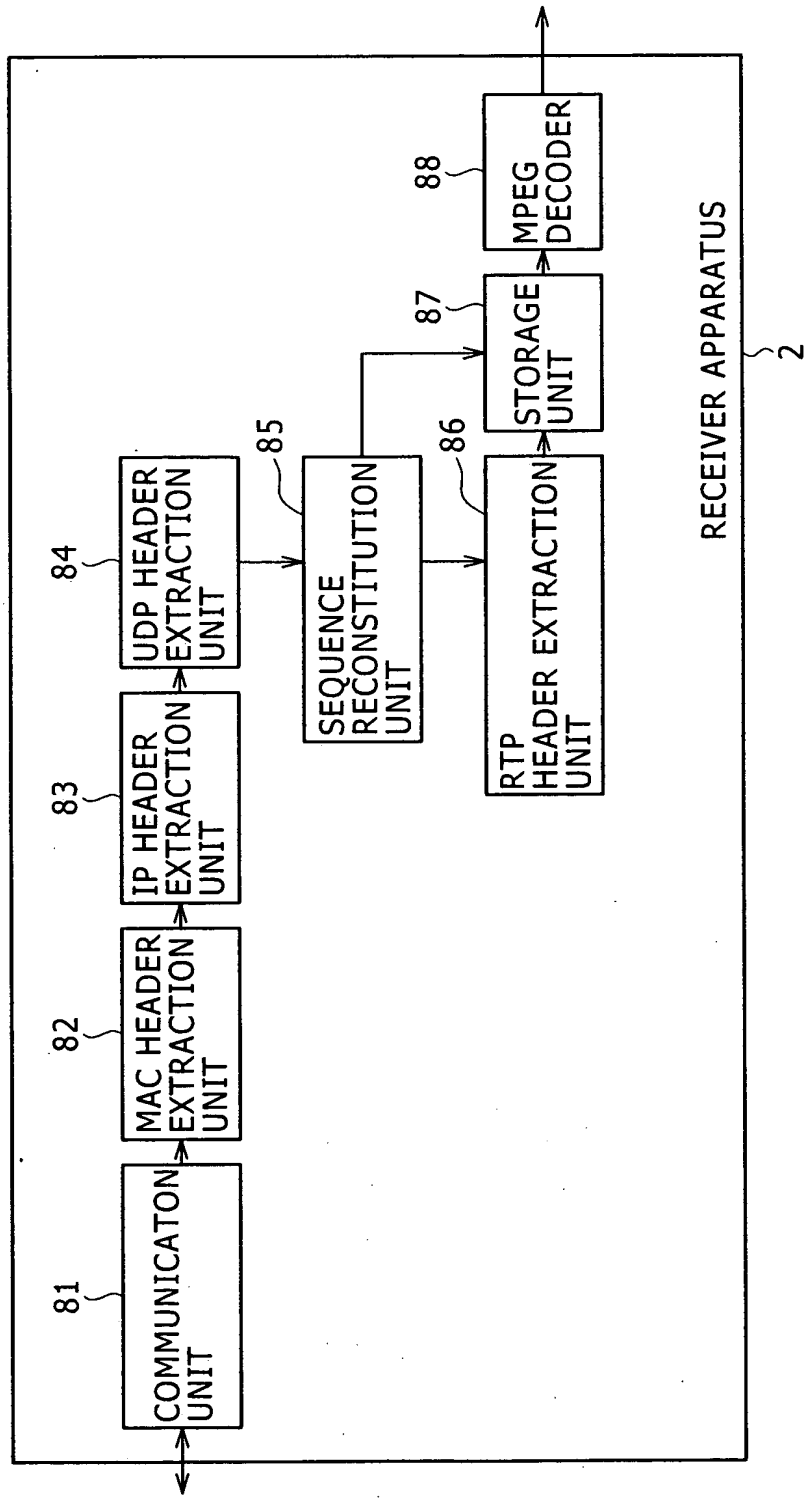

RECEIVER APPARATUS
2
81
COMMUNICATON UNIT
82
MAC HEADER EXTRACTION UNIT
83
IP HEADER EXTRACTION UNIT
84
UDP HEADER EXTRACTION UNIT
85
SEQUENCE RECONSTITUTION UNIT
86
RTP HEADER EXTRACTION UNIT
87
STORAGE UNIT
88
MPEG DECODER

FIG. 10

SEQUESNCE NO.	
1	TS PACKET 51-1-1
	TS PACKET 51-2-1
	TS PACKET 51-7-1
2	TS PACKET 51-1-2
	TS PACKET 51-2-2
	TS PACKET 51-7-2
3	
4	TS PACKET 51-1-4
	TS PACKET 51-7-4

87

FIG.11

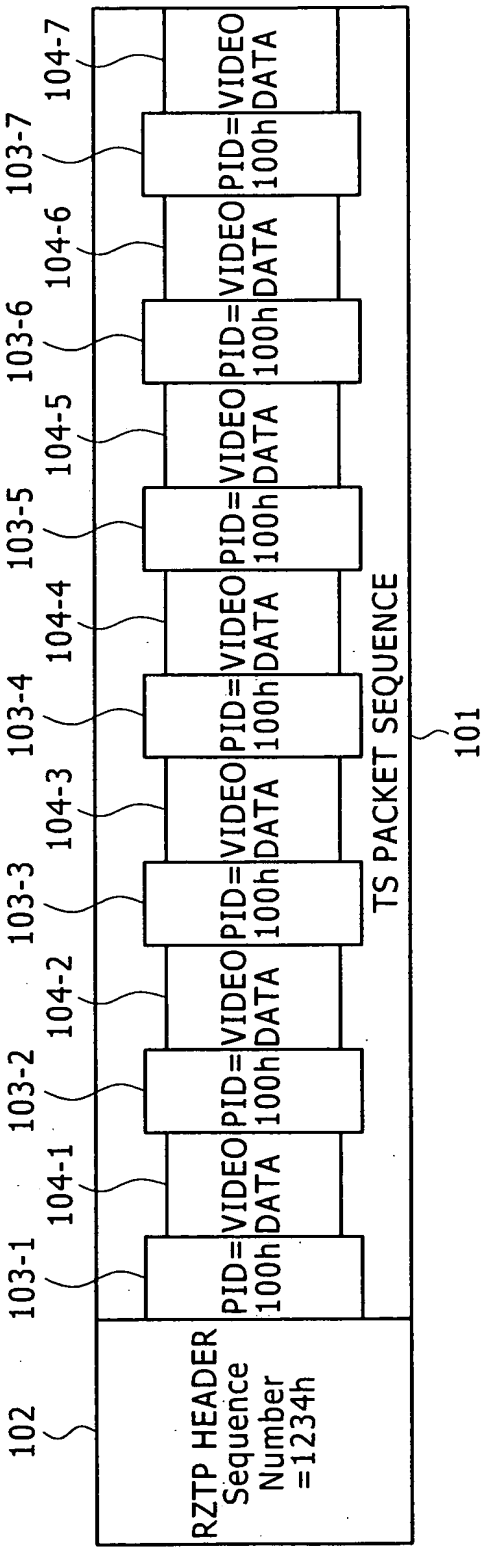

RZTP HEADER
Sequence
Number
=1234h
102
TS PACKET SEQUENCE
101
103-1
PID=
100h
VIDEO
DATA
104-1
103-2
PID=
100h
VIDEO
DATA
104-2
103-3
PID=
100h
VIDEO
DATA
104-3
103-4
PID=
100h
VIDEO
DATA
104-4
103-5
PID=
100h
VIDEO
DATA
104-5
103-6
PID=
100h
VIDEO
DATA
104-6
103-7
PID=
100h
VIDEO
DATA
104-7

FIG. 12

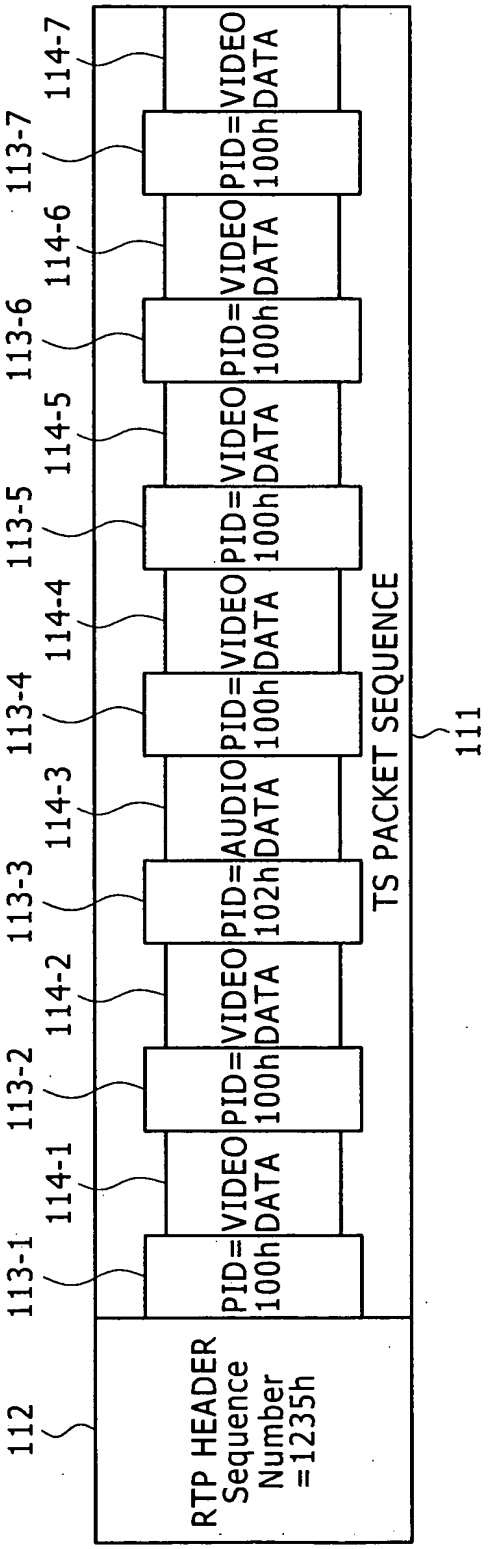

112
RTP HEADER
Sequence
Number
=1235h
113-1
114-1
PID=
100h
VIDEO
DATA
113-2
114-2
PID=
100h
VIDEO
DATA
113-3
114-3
PID=
102h
AUDIO
DATA
113-4
114-4
PID=
100h
VIDEO
DATA
113-5
114-5
PID=
100h
VIDEO
DATA
113-6
114-6
PID=
100h
VIDEO
DATA
113-7
114-7
PID=
100h
VIDEO
DATA
TS PACKET SEQUENCE
111

FIG. 13

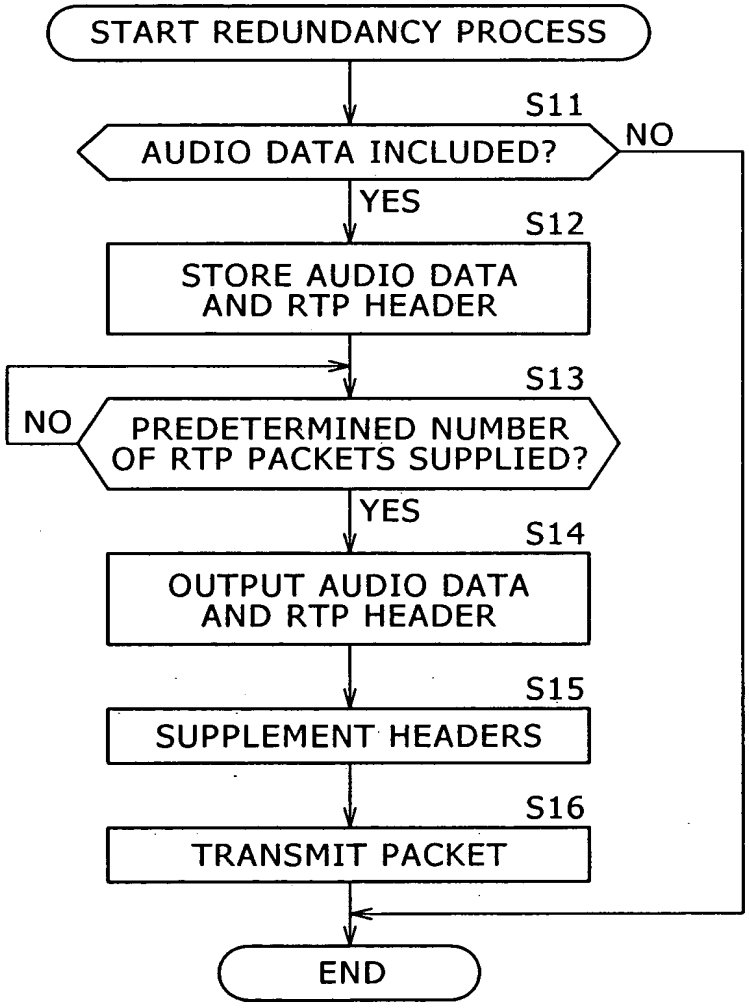

START REDUNDANCY PROCESS
S11
AUDIO DATA INCLUDED?
NO
YES
S12
STORE AUDIO DATA AND RTP HEADER
S13
NO
PREDETERMINED NUMBER OF RTP PACKETS SUPPLIED?
YES
S14
OUTPUT AUDIO DATA AND RTP HEADER
S15
SUPPLEMENT HEADERS
S16
TRANSMIT PACKET
END

FIG.14A

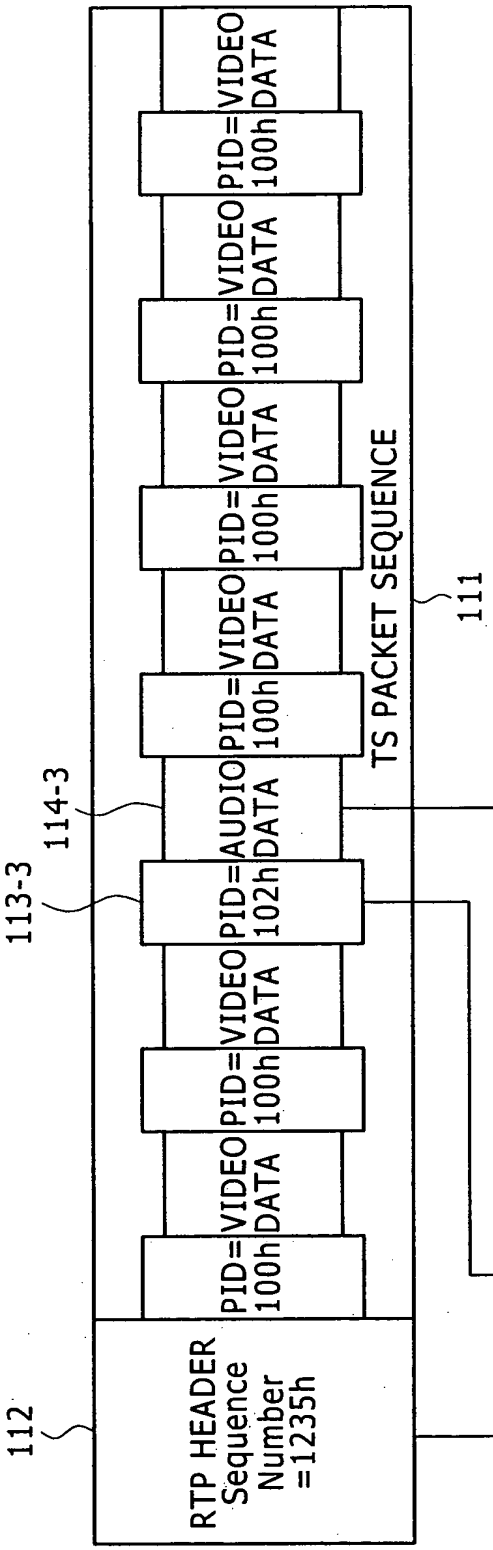


FIG.14B

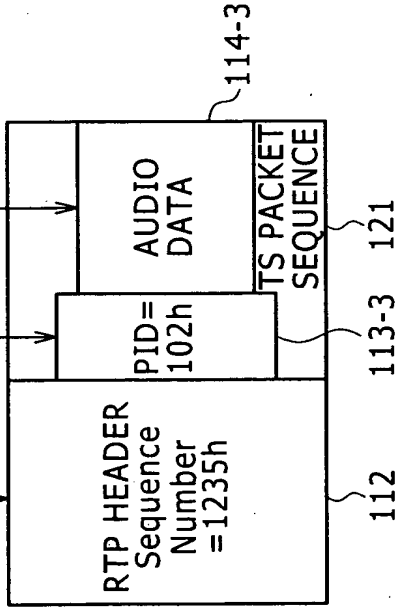


FIG.15

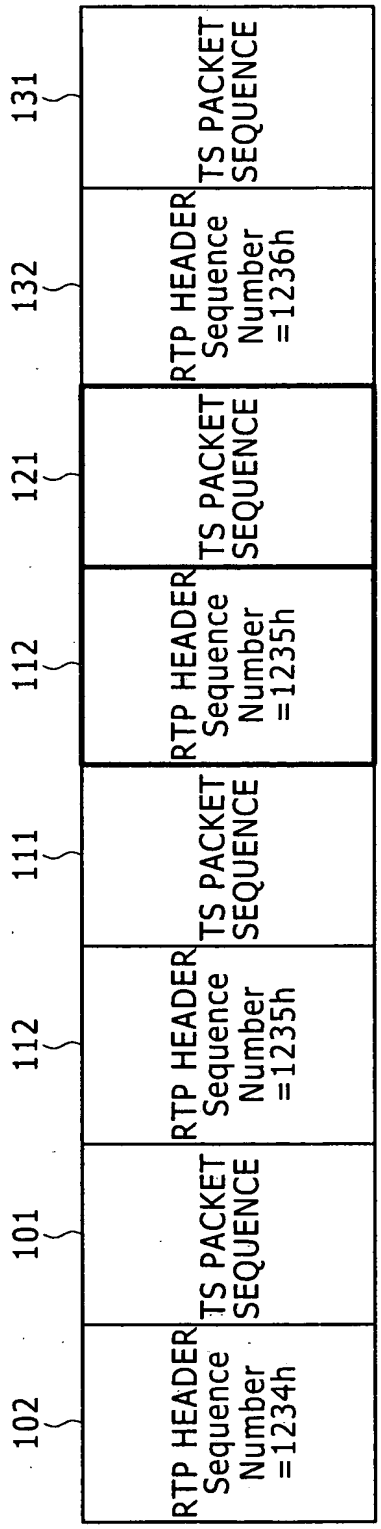

RTP HEADER Sequence Number =1234h
TS PACKET SEQUENCE
RTP HEADER Sequence Number =1235h
TS PACKET SEQUENCE
RTP HEADER Sequence Number =1235h
TS PACKET SEQUENCE
RTP HEADER Sequence Number =1236h
TS PACKET SEQUENCE
102
101
112
111
112
121
132
131

FIG.16

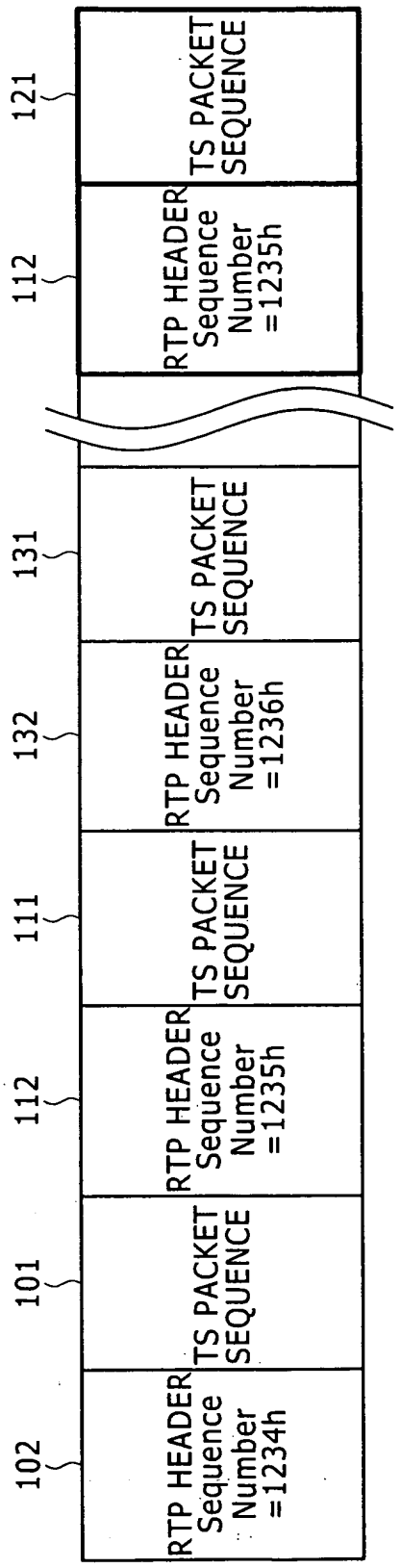

RTP HEADER Sequence Number =1234h
102
TS PACKET SEQUENCE
101
RTP HEADER Sequence Number =1235h
112
TS PACKET SEQUENCE
111
RTP HEADER Sequence Number =1236h
132
TS PACKET SEQUENCE
131
RTP HEADER Sequence Number =1235h
112
TS PACKET SEQUENCE
121

FIG. 17

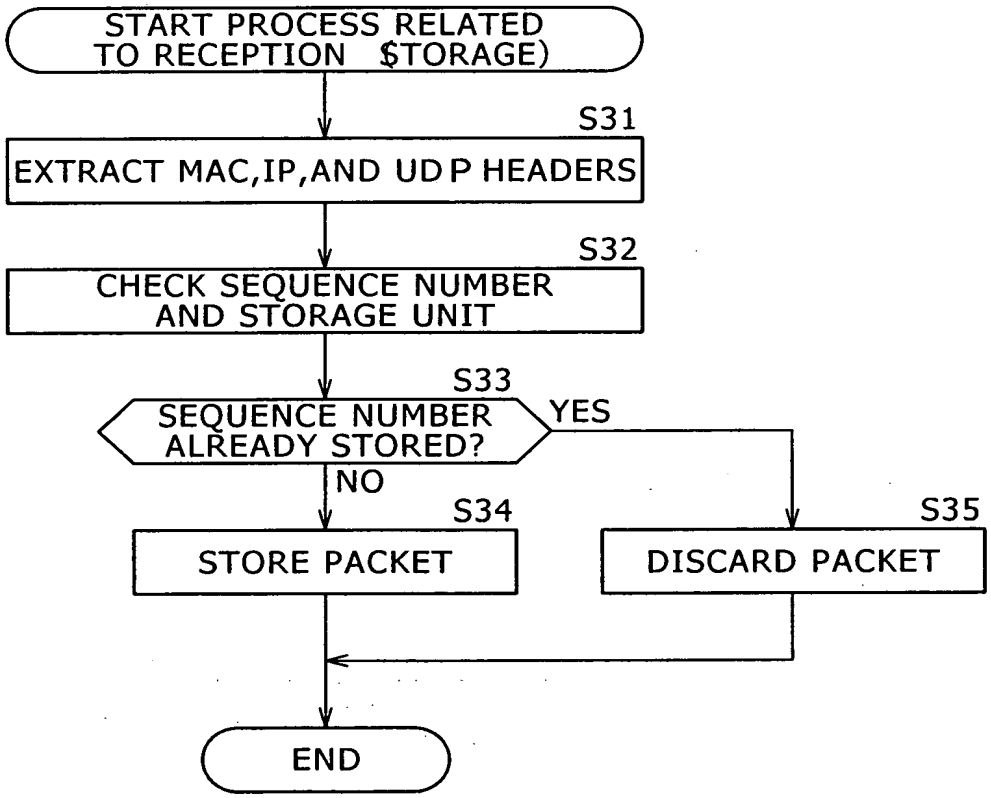
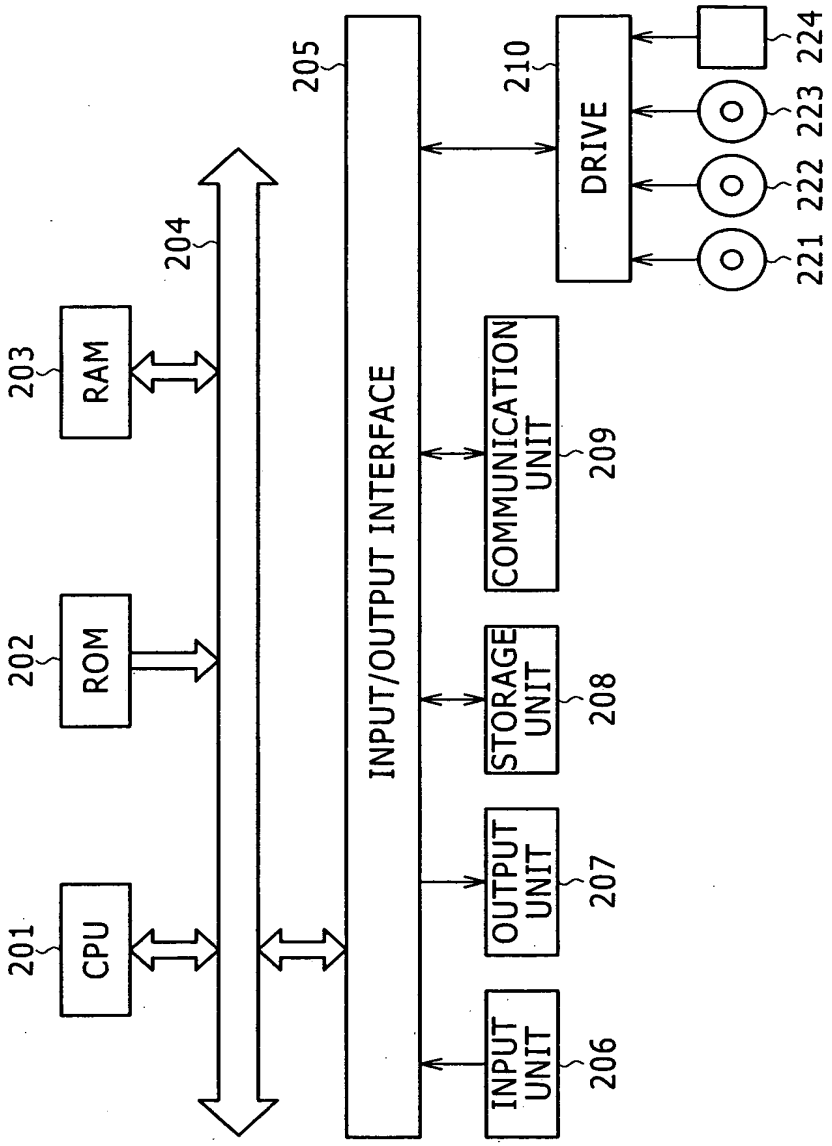

START PROCESS RELATED TO RECEPTION (STORAGE)
S31
EXTRACT MAC,IP,AND UDP HEADERS
S32
CHECK SEQUENCE NUMBER AND STORAGE UNIT
S33
SEQUENCE NUMBER ALREADY STORED?
YES
NO
S34
STORE PACKET
S35
DISCARD PACKET
END

FIG.18


201
CPU
202
ROM
203
RAM
204
205
INPUT/OUTPUT INTERFACE
206
INPUT UNIT
207
OUTPUT UNIT
208
STORAGE UNIT
209
COMMUNICATION UNIT
210
DRIVE
221
222
223
224